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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,555	05/18/2006	Gunter Rogoll	MSA 265	2113

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Horst M Kasper
13 Forest Drive
Warren, NJ 07059

EXAMINER	
MOFFAT, JONATHAN	
ART UNIT	PAPER NUMBER
2863	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,555	ROGOLL ET AL.	
	Examiner	Art Unit	
	Jonathan Moffat	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 April 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/4/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the alarm (claims 6-7), analog interface (claims 7-8), removable diagnosis module (claim 10) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Labels 10, 12, 13 and 18.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to. A clean copy of the abstract on its own page should be submitted to the office. Correction is required. See MPEP § 608.01(b).

Further, the specification contains no reference to the related PCT case which should be made on the first line of the specification.

Claim Objections

Claims 1 objected to because of the following informalities:

With respect to claim 1, the phrasing of this claim has rendered it unclear and confusing. In particular the phrase "adapted in use to one or more of the number of fieldbuses by means of...". The examiner is instead relying on claim 13 to interpret this claim since it is much clearer from that one what the applicant intends. However, assuming such clarification, the examiner cannot distinguish between these two claims.

In claims 7 and 8, the phrase "in use" should most likely be removed wherever it appears. This phrase does not appear to add any limitation or meaning to the claim.

Claim 15 is somewhat unclear. First, commas should be added between the words "which" and "on" in the first line and between "fieldbuses" and "a" in the second line. Second, the claim might be clearer if each "in which a..." clause were replaced with "wherein a" and if these clauses were separated and indented. Third, line 6 of the claim should read "which a third common mode signal..."

Claims 7-8 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or

rewrite the claim(s) in independent form. Each of these claims references an "alarm" which is not in the parent claim. These claims therefore lack proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.

Claims 1-2 and 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Scecina (US pat 5511223).

With respect to claim 1 and 13, Scecina discloses an apparatus comprising:

1) A modular fieldbus board (Fig 1) comprising a number of fieldbuses (Fig 1 item 40 is the module, Fig 5 item 18 shows the fieldbus board itself) connected to a bulk power supply (column 3 lines 64-67).

2) A diagnostic system (Fig 1 item 50 and Fig 4) comprising a monitoring transceiver means connected to one or more of the number of fieldbuses (Fig 4 items 12-15) by means of two or more common mode and/or differential mode signal injection and/or signal detection points, which points are dispersed between the bulk power supply and the fieldbus trunk, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (Figs 4 and 5).

With respect to claim 2, Scecina discloses the fieldbus physical layer characteristics comprise one or more of: over/under termination, noise/ripple level, signal level, signal bias, signal jitter, signal ringing, signal distortion, signal attenuation, cross talk, unbalance, and earth leakage (column 4 lines 21-50).

With respect to claim 7, Scecina discloses that the monitoring transceiver means is provided with a first digital and/or an analogue interface, such that diagnostic data detected and/or alarms created by the monitoring transceiver means in use are transmitted to a digital or analogue device operated by a user, and such that commands are sent in use from the user operated digital or analogue device to operate the monitoring transceiver means (Fig 1 item 60 and claim 2).

With respect to claim 8, Scecina discloses a second digital and/or an analogue interface, such that diagnostic data detected and/or alarms created by the monitoring transceiver means in use are transmitted to other associated diagnostic systems (Fig 1 item 60 this workstation is another system associated).

With respect to claim 9, Scecina discloses a visual means to display diagnostic data (Fig 1 item 60 and claim 2). "Provided with" is not limited to "integral to".

With respect to claim 10, Scecina discloses that the diagnosis module is removable from the fieldbus board (Abstract).

With respect to claim 11, Scecina discloses that the monitoring transceiver means is connected to the bulk power supply (column 3 lines 64-67).

With respect to claim 12, Scecina discloses signal detection points are disposed within hardware carried on the board (Fig 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eryurek (US pat 6859755) in view of DelaCruz (US pat pub 20040073402).

With respect to claim 1 and 13, Eryurek discloses an apparatus comprising:

1) A modular fieldbus board (Fig 1 item 18) comprising a number of fieldbuses (Fig 1 items 20 and Fig 2 each of which is a fieldbus unit in loop 18) connected to a bulk power supply (Fig 2 item 30).

2) A diagnostic system (Fig 2 item 36) comprising a monitoring transceiver means connected to one of the number of fieldbuses (Fig 2) by means of two or more common mode and/or differential mode signal injection and/or signal detection points, which points are dispersed between the bulk power supply and the fieldbus trunk (Fig 2).

With respect to claim 2, Eryurek discloses the fieldbus physical layer characteristic comprises, at least noise/ripple level (column 3 line 66).

With respect to claim 3, Eryurek discloses that the monitoring transceiver means also detects one or more characteristics of hardware carried on the modular fieldbus board by means of one or more of said points (column 4 lines 35-38).

With respect to claim 4, Eryurek discloses that the one or more characteristics of hardware comprise one or more of: voltage, short circuit, hardware module failure, quiescent current, and rate of charge (column 4 lines 35-38).

With respect to claim 5, Eryurek discloses that the monitoring transceiver means is adapted to gather received data and produce one or more of: Fourier analysis, trending analysis, and data logging. (column 4 lines 10-21).

With respect to claim 6, Eryurek discloses that the monitoring transceiver means is adapted to provide an alarm in the event that received data indicates one or more of pre-determined failures or the one or more fieldbuses (column 4 lines 14-16 and 19-21).

With respect to claim 7, Eryurek discloses that the monitoring transceiver means is provided with a first digital and/or an analogue interface, such that diagnostic data detected and/or alarms created by the monitoring transceiver means in use are transmitted to a digital or analogue device operated by a user, and such that commands are sent in use from the user operated digital or analogue device to operate the monitoring transceiver means (column 4 19-21).

With respect to claim 8, Eryurek discloses a second digital and/or an analogue interface, such that diagnostic data detected and/or alarms created by the monitoring transceiver means in use are transmitted to other associated diagnostic systems (Fig 1 item 14).

With respect to claim 9, Eryurek discloses a visual means to display diagnostic data (Fig 1 item 12 and column 4 19-21).

With respect to claim 11, Eryurek discloses that the monitoring transceiver means is connected to the bulk power supply (Fig 2 item 30).

With respect to claim 12, Eryurek discloses signal detection points are disposed within hardware carried on the board (Fig 2).

With respect to claim 1 and 13, Eryurek fails to specify fieldbus physical layer characteristics between two of the two or more of said points.

With respect to claim 10, Eryurek fails to disclose the monitoring transceiver means is removable from the fieldbus board.

DelaCruz teaches, with respect to claims 1 and 13:

2) A diagnostic system (Fig 1 item 22) comprising a monitoring transceiver means connected to one or more of the number of fieldbuses (Fig 1) by means of two or more common mode and/or differential mode signal injection and/or signal detection points, which points are dispersed between the bulk power supply and the fieldbus trunk, such that the monitoring transceiver means can detect one or more fieldbus physical layer characteristics between two of the two or more of said points (paragraph 0012).

DelaCruz teaches, with respect to claim 10, that the monitoring transceiver means is removable from the fieldbus board (Fig 1 item 22).

It would have been obvious to one of ordinary skill in the art to modify the apparatus of Eryurek by using a separate handheld diagnostics device as taught by DelaCruz. Eryurek discloses that the monitored quality may be signal noise, which, being a subspecies of "fieldbus layer characteristics" clearly is in the same field of endeavor as DelaCruz. Further, the portable device of DelaCruz reduces cost be eliminating redundant components (i.e. using the same testing circuitry for all modules).

3.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eryurek and DelaCruz as applied to claim 13 above, and further in view of Westerfeld (WO 009945621).

With respect to claims 14-16, Eryurek and DelaCruz fail to disclose a power supply converter and conditioner. One of ordinary skill in the art would have found it obvious to put power conditioning and/or conversion onboard such a module to eliminate noise and, especially in the intrinsically safe environment of Eryurek, to prevent sparks or explosions. However, the examiner presents the following reference to show further this obviousness.

Westerfeld teaches, with respect to claim 14, power supply conversion (Fig 2 item 114) and power supply conditioning (Fig 2 item 1131-113n) in an intrinsically safe fieldbus (abstract) environment (Fig 1 item 1).

It would have been obvious to one of ordinary skill in the art, as stated above to modify the apparatus of Eryurek and DelaCruz by including power conversion and conditioning. Both Eryurek and Westfeld present the importance for intrinsic safety of such conversion to prevent an accident due to sparking or other power-related issues.

With respect to claims 15-16, the examiner has given these claims the broadest reasonable interpretation. The examiner maintains that these claims may be interpreted as "common mode signal detection points" being merely points within the system capable of being monitored with an injected or detected signal. The examiner maintains that, under this interpretation, since reference Westerfeld discloses such components connected to each other, these points do exist though they are not being actively monitored.

Examiner's Comments

Due to the scarcity of details of the inventive system given in applicant's specification and the fact that "fieldbus" has a wide variety of interpretations, the examiner has presented above what is believed to be the closest and most pertinent prior art. However, to provide a more complete record, the examiner presents the following prior art not relied upon for rejection but still considered pertinent as it reads on other possible interpretations of "modular fieldbus components".

King (Us pat 7233877) discloses a "blade server" type tower of modular network server components.

Schleiss (US pat pub 20020010562) presents another type of data collection system that is described as "fieldbus" and discusses thresholds, alarms, etc.

Smith (US pat pub 20030144817) discusses a wire fault analyzer, which looks at connector modules that are commonly connected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Moffat whose telephone number is (571) 272-2255. The examiner can normally be reached on Mon-Fri, from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

8/30/07

JM

John Barlow
Supervisory Patent Examiner
Technology Center 2800